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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Peter Healey

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EXAMINER

MIAN, OMER S

ART UNIT

PAPER NUMBER

2416

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/594,433	Applicant(s) HEALEY ET AL.	
	Examiner OMER MIAN	Art Unit 2416	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 September 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-32 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 September 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>08/22/2007</u> . | 6) <input type="checkbox"/> Other: _____ |

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Larry Nixon on 7/22/2009.

The application has been amended as follows:

Claim 8 is amended by replacing text:

"A method as claimed in any of the preceding claims, wherein the signal copies are carried along a common transmission medium of the optical transmission link."

by the following text:

"A method as claimed in claim 1, wherein the signal copies are carried along a common transmission medium of the optical transmission link."

DETAILED ACTION

Claim Objections

2. Claim 5 and 13 is objected to because of the following informalities:

Claim 5 recites, "...and a wherein the first and second..." Here the word "a" is removed and assumed to be a grammatical error.

Claim 13 recites the word "channelled". The correct U.S. spelling version is "channeled".

Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claim 16 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

In claim 16, limitation “sense” in line 2 does not refer to anything according to the claim. Looking into the disclosure does not give any further understanding of this limitation. It is not clear to what this limitation is pointing to and therefore making the invention not enabling for one of ordinary skill in the art to make and use the same.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. **Claims 1-2, 8-17, 22 and 24-25 are rejected under 35 U.S.C. 102(b) as being anticipated by LANGE et al (US 2003/0103211).**

Regarding claim 1, LANGE discloses *method of evaluating the position of a time-varying disturbance on a transmission link, the method including the steps of:*

copying, at least in part, an output signal from a source, such that there is a pair of signal copies (Fig. 1 and ¶27, where light is made into to two beams and travels in a pair);

transmitting the signal copies onto the transmission link (¶32, light travels on optical links);

receiving from the transmission link at least partially returned signal copies previously transmitted thereon (Fig. 1 and ¶28, light is reflected and returned);

combining the received signal copies of a transmitted pair so as to produce a combination signal (¶43, where received pair is combined at Y-junction); and,

using a temporal characteristic in the combination signal to evaluate the position of the disturbance on the transmission link (Fig. 3 and 6, ¶23 and ¶62, detection is performed of the received signal at a frequency).

Regarding claim 2, LANGE discloses method, *wherein the temporal characteristic includes the time at which a disturbance feature occurs in the combination signal (Fig. 3 and 6, ¶62 and ¶53, detection is performed of the received signal at a frequency and with respect to time and spikes are observed).*

Regarding claim 8, LANGE discloses method, wherein the signal copies are carried along a common transmission medium of the optical transmission link (LANGE: Fig. 1 and ¶43, signal is carried over the common medium of optical fiber).

Regarding claim 9, LANGE discloses method, wherein signal copies of a pair travel along the transmission link with a differential delay relative to one another (LANGE: ¶27 and ¶43 where phase delay is added between the beams of light).

Regarding claim 10, LANGE discloses method, wherein the differential delay is caused at an unbalanced interferometer coupled to an optical source, the interferometer having a first path and a second path, the transit time of the first path being longer than that of the second path, signal copies of a pair being caused to travel along a different respective path to one another (LANGE: Fig. 4 and Fig. 1, ¶27 and ¶43 modulation performed to delay one of the signal and paths are different for the different).

Regarding claim 11, LANGE discloses method, wherein the interferometer has a first coupling stage which is coupled to the source, the coupling stage being arranged to channel one portion of the incoming radiation intensity from the source along one path, and another portion of the incoming radiation intensity along the other path, so as to form the first and second signal copies (LANGE: ¶27 and ¶43, beam divided into two parts).

Regarding claim 12, LANGE discloses a method as claimed in claim 11, wherein the interferometer has a second coupling stage for combining radiation from the first and second paths, and for coupling the combined radiation to the common communications link (LANGE: Fig. 1 and ¶¶27-30 and ¶43, beam divided into two parts and rejoined at the coupler).

Regarding claim 13, LANGE discloses a method, wherein the signals returned from the second location are each channeled along the first and second paths by a second coupling stage, and wherein the so channeled signals are subsequently combined at the first coupling stage (LANGE: Fig. 1 and ¶¶27-30 and ¶43, beam divided into two parts and rejoined at the coupler).

Regarding claim 14, LANGE discloses a method, wherein the signal copies of a pair are delayed relative to one another at a first location, and wherein at disturbance is detectable at a second location remote from the first location (LANGE: Fig. 1 and ¶¶27-30 and ¶43, beam divided into two parts and rejoined at the coupler).

Regarding claim 15, LANGE discloses a method wherein each of the signal copies of a pair is disturbed by a detected disturbance (LANGE: ¶¶23 and ¶62, break or inconsistency which affect the pair of beams is detected).

Regarding claim 16, LANGE discloses method wherein the signal copies of a pair travel in the same sense along the transmission link (Fig. 1 and ¶¶27-31, signal travels in the same direction in the optical link).

Regarding claim 17, LANGE discloses method, wherein the output signals have an average phase-coherence time associated therewith of less than 1 pico seconds (LANGE: ¶¶30, the coherence length is several hundreds of microns).

Regarding claim 22, LANGE discloses an apparatus *evaluating the position of a time-varying disturbance on a transmission link, the method including the steps of:*

means for copying, at least in part, an output signal from a source, such that there is a pair of signal copies (Fig. 1 and ¶¶27, where light is made into two beams and travels in a pair);

means for transmitting the signal copies onto the transmission link (¶¶32, light travels on optical links);

means receiving from the transmission link at least partially returned signal copies previously transmitted thereon (Fig. 1 and ¶¶28, light is reflected and returned);

means for combining the received signal copies of a transmitted pair so as to produce a combination signal (¶¶43, where received pair is combined at Y-junction); and,

monitoring means for monitoring the combinations signal as a function of time (Fig. 3 and 6, ¶¶23 and ¶¶62, detection is performed of the received signal at a frequency).

Regarding claim 24, LANGE discloses an apparatus *wherein delay means is provided for delaying the signal copies of a pair relative to one another* (LANGE: ¶27 and ¶43 where phase delay is added between the beams of light).

Regarding claim 25, LANGE discloses an apparatus *wherein delay means the delay means is provided by an interferometer stage, the interferometer stage having first and second transmission legs* (LANGE: ¶43 and ¶27-31 and Fig. 1, two transmission legs 112 and 114 exist) *and coupling means for coupling to or from the first and second legs* (LANGE: fig. 1 and ¶27-31 coupler is connected to the legs), *and wherein the means for copying output signals and the means for combining the received signal copies are formed in common by the coupling means* (LANGE: ¶27 and Fig. 1, coupler and Y-junction is in the same sensor system).

7. **Claims 30-32 are rejected under 35 U.S.C. 102(b) as being anticipated by DALLAIRE et al (US 4855915).**

Regarding claim 30, DALLAIRE discloses a *sensing system for sensing the position of a moving vehicle, the sensing system having:*

a guide track for guiding the movement of the vehicle (DALLAIRE: col. 1 line 6-10, path is set for the movement of a vehicle);

an optical channel extending along the guide track (DALLAIRE: col. 1, lines 40 – 60, where optical line crosses the vehicle path); and,

monitoring apparatus coupled to the optical channel, wherein the optical channel is mechanically coupled to the guide track such that movement of the vehicle causes a moving disturbance along the optical channel (DALLAIRE: col. 1 lines 40-col. 2 line 50, the optical contact with the targets are in a continuous monitoring mode),

the monitoring apparatus being configured to

(i) detect a light signal from the optical channel indicative of a the moving disturbance (DALLAIRE: col. 1 lines 40-col. 2 line 50, the optical contact with the targets is disturbed when vehicle is crossing),

(ii) evaluate at least one temporal characteristic of the light signal (DALLAIRE: col. 4 lines 43-50, where sequential characteristic associated with the position of the vehicle is recorded with respect to time), and

(iii) in dependence on the evaluated temporal characteristic, determine an indication of the position of the moving disturbance along the channel so that the position of the vehicle along the track can be sensed (DALLAIRE: col. 1 lines 40-col.2 lines 64, col. 4 lines 43-50, where sequential characteristic associated with the position of the vehicle is recorded with respect to time).

Regarding claim 31, DALLAIRE discloses a *sensing method of sensing the position of a vehicle moving along a guide track,*

wherein there is provided an optical channel extending along the guide track, and

monitoring apparatus coupled to the optical channel, the optical channel being mechanically coupled to guide track such that movement of the vehicle causes a moving disturbance along the optical channel (DALLAIRE: col. 1 lines 40-col. 2 line 50, the optical contact with the targets are in a continuous monitoring mode), the method including the steps of:

(i) detect a light signal from the optical channel indicative of a the moving disturbance (DALLAIRE: col. 1 lines 40-col. 2 line 50, the optical contact with the targets is disturbed when vehicle is crossing),

(ii) evaluate at least one temporal characteristic of the light signal (DALLAIRE: col. 4 lines 43-50, where sequential characteristic associated with the position of the vehicle is recorded with respect to time), and

(iii) in dependence on the evaluated temporal characteristic, determining an indication of the position of the moving disturbance along the channel(DALLAIRE: col. 1 lines 40-col.2 lines 64, col. 4 lines 43-50, where sequential characteristic associated with the position of the vehicle is recorded with respect to time); and

(iv) inferring the position of the vehicle from the position of the disturbance along the optical channel (DALLAIRE: col. 1 lines 40-col.2 lines 64, col. 4 lines 43-50, where sequential characteristic associated with the position of the vehicle is recorded with respect to time).

Regarding claim 32, DALLAIRE discloses a *method of monitoring a transmission link to detect a physical disturbance of the link, the method including the steps of:*

copying, at least in part, an output signal from a source, such that there is a pair of signal copies (Fig. 1 and ¶27, where light is made into two beams and travels in a pair);

transmitting the signal copies onto a common communications link (¶32, light travels on optical links);

receiving from the transmission link at least partially returned signal copies previously transmitted thereon (Fig. 1 and ¶28, light is reflected and returned);

combining the received signal copies of a transmitted pair so as to produce a combination signal (¶43, where received pair is combined at Y-junction); and,

monitoring the combination signal to detect a disturbance feature in the combination signal, from which disturbance feature the presence of a disturbance can be inferred; and using a temporal characteristic in the combination signal to evaluate the position of the disturbance on the communications link (Fig. 3 and 6, ¶23 and ¶62, detection is performed of the received signal at a frequency).

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

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invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

10. **Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over LANGE et al (US 20030103211).**

Regarding claim 18 Prior art of record discloses a method as claimed in claim 17, wherein the signal copies of a pair have a differential delay time associated therewith (LANGE: ¶27-30 delays are introduced between the signals), the delay time being greater than the average phase-coherence time (LANGE: ¶31, delay path length is significantly shorter than the delay path length).

LANGE does not explicitly disclose that delay length is greater by a factor of at least 1000.

However, it is generally considered to be within the ordinary skill in the art to adjust, vary, select or optimize the numerical parameters or values of any system

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absent a showing of criticality in a particular recited value. The burden of showing criticality is on Appellant. *In re Mason*, 87 F.2d 370, 32 USPQ 242 (CCPA 1937); *Marconi Wireless Telegraph Co. v. U.S.*, 320 U.S. 1, 57 USPQ 471 (1943); *In re Seather*, 492 F.2d 849, 181 USPQ 233 (CCPA 1945).

11. Claims 3-4, 26-29 rejected under 35 U.S.C. 103(a) as being unpatentable over LANGE et al (US 20030103211) in view of BRYCE et al (US 7397568).

Regarding claim 3, LANGE discloses method, *wherein signal copies are returned as the signal copies travel along the transmission link* (LANGE: ¶28, signals are reflected and returned)

LANGE does not explicitly disclose that the returning is *by a process of distributed backscattering*.

However, BRYCE expressly discloses that the returning is *by a process of distributed backscattering* (BRYCE: col. 7 lines 9-23, backscattered from distributed targets is produced).

A person of ordinary skill in the art working with the invention of LANGE would have been motive to use the technique of BRYCE of distributed backscattering as it provides ability of implementation over wide range of wavelengths increasing the applicability of the invention (BRYCE: col. 2-col.3). Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to combine the

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inventions of LANGE and BRYCE in order to increase industrial applicability of the invention.

Regarding claim 4, the combined teachings of LANGE and BRYCE, hereinafter C&B, discloses method, wherein the source is configured to produce output signals having the form of optical pulses, each optical pulse giving rise to a combination signal that is distributed over time as the pulse travels along the transmission link (LANGE: Fig. 4 and ¶29, where light source generate optical pulse, where combined signal is risen (LANGE: Fig. 3)).

Regarding claim 26, LANGE discloses a monitoring stations for *monitoring a transmission link, the monitoring station having:*

a source for generating output signals (Fig. 1 and ¶26, output source);

an interferometer stage for copying at least in part the output signals from the source such that for each output signal, there is a pair of signal copies (Fig. 1 and ¶27, where light is made into to two beams and travels in a pair);

an output for launching the signal copies onto the transmission link (¶32, light travels on optical link); and,

a processor circuit (¶41, processing circuit);

wherein the interferometer stage is arranged to receive signal copies returned by a process from the link and to combine the signal copies so as to produce an interference signal (Fig. 1 and ¶26-28, light is reflected, returned and received, the signals is combined with the modulated signal at the coupler), and

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wherein the processor circuit is arranged to store the interference signal in association with an indication of a temporal characteristic of the return signal(Fig 1 and 3 and 6, ¶23 and ¶62, detection is performed of the received signal at a frequency based on the modulated signal which is from the Electronics 126 in Fig. 1).

LANGE does not explicitly disclose that the *process is distributed backscattering process*.

However, BRYCE expressly discloses that the process is *distributed backscattering process* (BRYCE: col. 7 lines 9-23, backscattered from distributed targets is produced).

A person of ordinary skill in the art working with the invention of LANGE would have been motive to use the technique of BRYCE of distributed backscattering as it provides ability of implementation over wide range of wavelengths increasing the applicability of the invention (BRYCE: col. 2-col.3). Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to combine the inventions of LANGE and BRYCE in order to increase industrial applicability of the invention.

Regarding claim 27, L&B *discloses monitoring station, wherein the interference signal is a time-distributed signal which varies with time, and wherein a temporal characteristic is the time variation of the return signal* (LANGE: Fig. 4, and Fig. 1, ¶62 and ¶53, sampled at a frequency and the signal is different at different times).

Regarding claim 28, L&B *discloses monitoring station, wherein the interference signal is a time-distributed signal, and the processor circuit is arranged to sample the interference signal at intervals* (LANGE: Fig. 4, and Fig. 1, ¶¶62 and ¶53, sampled at a frequency and processed), *and to store the samples in association with a respective return time for each sample* (LANGE: Fig 1, ¶53 and ¶43, where a delay is induced and a memory is present).

Regarding claim 29, L&B *discloses monitoring station, wherein the source is an optical pulse source* (LANGE: ¶29, optical sources).

12. Claims 5-7 rejected under 35 U.S.C. 103(a) as being unpatentable over LANGE et al (US 20030103211) in view of REINGANG et al (US 7110677).

Regarding claim 5, LANGE discloses method, wherein the combination signal is sampled at temporal positions (LANGE: ¶62 and Fig. 1, the detector is sampling at a frequency.)

LANGE does not expressly disclose that sampling is at a first set of spaced apart temporal positions and at a second set of temporal position, and a wherein the first and second sampled sets are compared in a comparison step

However, REINGANG expressly discloses that sampling is at a first set of spaced apart temporal positions and at a second set of temporal position, and a wherein the first and second sampled sets are compared in a comparison step

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(REINGANG: col. 10 line 65-col. 11 line 13, optical signals are detected by sampling based on different delay and hence different sampling sets and the sampled signals are compared).

A person of ordinary skill in the art at working with the invention of LANGE would be motivated to use the method of detecting of interleaved optical signals of REINGANG as it provides improved efficiency of detecting signals is achieved as they signals do not overlap (REINGANG: col. 1 lines 55-60). Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to combine the inventions of LANGE and REINGANG in order to increase industrial applicability of the invention.

Regarding claim 6, the combined teachings of LANGE and REINGANG, hereinafter L&R, discloses method, wherein the temporal positions of the first and second sets are interleaved (col. 10 lines 65- col. 11 line 13, the positions are interleaved).

Regarding claim 7, L&R discloses method, wherein the comparison step involves generating a set of data which is at least in part dependent on the difference between the first and second sets (LANGE: ¶¶27-29 where the difference in the two received signals is the result of the comparison).

13. Claims 19-21 rejected under 35 U.S.C. 103(a) as being unpatentable over LANGE et al (US 20030103211) in view of DALLAIRE et al (US 4855915).

Regarding claim 19, LANGE discloses a method as claimed in claim 1 above.

LANGE does not explicitly disclose an optical channel extending along a guide track, the guide track being arranged to guide the movement of a vehicle, the channel being arranged such that movement of the vehicle causes a disturbance along the optical channel.

However, DALLAIRE discloses an optical channel extending along a guide track, the guide track being arranged to guide the movement of a vehicle, the channel being arranged such that movement of the vehicle causes a disturbance along the optical channel (DALLAIRE: col. 1 line 40 – col. 2 line 64, vehicle movement causes the obstruction in the link).

A person of ordinary skill in the art working with the invention of LANGE would have been motivated of using the technique taught by DALLAIRE of using disturbances to control and guide vehicle as it provides an industrial application of the invention. Therefore, it would have been obvious to one of ordinary skill in the art at the time of inventions to combine the inventions of LANGE and DALLAIRE in order to increase applicability and consumer market of the invention.

Regarding claim 20, the combined teachings of LANGE and DALLAIRE, hereinafter L&D, discloses a method, wherein the path of the optical channel crosses the track at intervals (DALLAIRE: col. 1 line 40 – col. 2 line 64, channels cross the path of the vehicle).

Regarding claim 21, L&D discloses method as in claim 20 above wherein the track is for guiding movement of a vehicle (DALLAIRE: Abstract, guiding system for a vehicle).

DALLAIR does not explicitly disclose that the track has the form of one or more rails for guiding the movement of a train.

However, a train is well known vehicle to one of ordinary skill in the art to transport goods and the rail is the form of track widely used for trains to provide more manageable movement of the train.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to implement the invention of DALLAIRE with a vehicle which is a train and the track for the vehicle which is a rail as trains have proven over past decades to be an energy and time efficient transportation means for both goods and passengers.

14. Claim 23 rejected under 35 U.S.C. 103(a) as being unpatentable over LANGE et al (US 20030103211) in view of SORIN et al (US 5982791).

Regarding claim 23, LANGE discloses an apparatus as set forth in claim 22 above where monitoring means is disclosed (Fig. 3 and Fig. 4, and ¶23, ¶62, where signal is monitored).

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LANGE does not explicitly disclose *monitoring means includes a display device for displaying the combination signals as a function of time.*

However, SORIN discloses *monitoring means includes a display device for displaying the combination signals as a function of time* (SORIN: col. 3, lines 13 - 27, spectrum analyzer is used to monitor the optical signal).

A person of ordinary skill in the art working with the invention of LANGE would have been motivated of using the technique taught by SORIN as it provides more real-time and dynamic adjustment of back-reflecting the optical carrier (SORIN: col. 3). Therefore, it would have been obvious to one of ordinary skill in the art at the time of inventions to combine the inventions of LANGE and DALLAIRE in order to increase applicability and consumer market of the invention.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to OMER MIAN whose telephone number is (571)270-7524. The examiner can normally be reached on Monday-Thursday 8:30am-6pm and Fridays 8:30am-12:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, HUY VU can be reached on (571)272-3155. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/O. M./

Examiner, Art Unit 2416

/HUY D VU/

Supervisory Patent Examiner, Art Unit 2416